

**OFFICE OF SOLID WASTE MANAGEMENT  
ANNUAL REPORT TO THE TWENTY-NINTH LEGISLATURE  
STATE OF HAWAI'I  
2017**

PURSUANT TO SECTION 342G-15, HAWAII REVISED STATUTES,  
REQUIRING THE OFFICE OF SOLID WASTE MANAGEMENT TO GIVE AN  
ANNUAL REPORT ON SOLID WASTE MANAGEMENT

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## **I. INTRODUCTION**

The Office of Solid Waste Management (OSWM) provides an annual report to the Hawai'i State Legislature to describe progress towards meeting the State's waste reduction goals. OSWM is part of the Department of Health's Solid and Hazardous Waste Branch (SHWB) and administers the Deposit Beverage Container (DBC) Program, the Electronic Waste and Television Recycling and Recovery Program, and the Glass Advance Disposal Fee (ADF) Program. These three programs play an instrumental role in achieving the State's waste reduction goals.

## **II. SOLID WASTE MANAGEMENT PRIORITIES AND PRACTICES**

Section 342G-2, Hawai'i Revised Statutes, requires the Department and the counties to consider solid waste management practices and methods in the following order of priority:

- 1) Source Reduction
- 2) Recycling (to include bioconversion)
- 3) Landfilling and/or incineration

The first two practices reduce the amount of waste to be either landfilled or incinerated.

### **Source Reduction**

Source reduction is also called "waste prevention" or "waste reduction" and means creating less waste. Although not included in the list of priorities, "Reuse" means using a product over without first having to reprocess it. The product may be used for its original or intended use or may be used in a different capacity. "Recycling" is the process by which materials are collected and used as "raw" materials to create new products. All these methods are sometimes referred to collectively as "waste diversion."

Because waste reduction avoids creation of waste, it is inherently difficult to quantify. In some cases, comparisons can be made to waste levels before a waste reduction practice was employed to waste levels after. In most cases, an estimate of the amount of waste reduced is all that is possible.

### **Reuse**

Reuse of products or materials is marginally easier to measure than waste reduction because it involves actual material. It can be measured counting the units of a particular product being reused or measuring its tonnage. However, effectively measuring reuse is difficult because it takes place at so many levels and on an unregulated and widespread scale. For example, the reuse of plastic and glass containers for food storage at home or in the workplace. This activity contributes to overall waste reduction, but it is impossible to accurately measure. Some reuse activity is accounted for in the diversion statistics presented in this report; at least two counties gather data on the amounts of material that is donated to non-profit organizations such as the Salvation Army or Goodwill Industries.

### **Recycling**

Recycling is the most easily quantified activity of the waste diversion trio for at least two reasons. First, like reuse, it involves actual material that can be measured. Second, data from recycling facilities are regularly collected by the state and counties.

## Diversion

Diversion refers to the combination of reuse and recycling activities. It does not include landfilling, incineration, or waste to energy processes. The diversion rates presented below are based on data collected by the counties. The current diversion rate is composed primarily of recycling activity and a small amount of reuse activity.

The United States Environmental Protection Agency's (EPA) most recent data indicate a national recycling rate of 34.3% for 2013. The State's goal of 50% waste diversion was set in 1991 and mirrored EPA's national recycling goal at the time of 50% by 2000. Since then, the EPA had revised the goal down to 35% recycling by 2005; and, currently, discontinued the use of a stated national recycling goal.

Hawai'i's commercial recyclers contend with long standing challenges which include high land values (which translate to high land lease or rental costs) and high shipping costs. Recycling markets for nearly all the state's recyclable material are out of state. Most recyclables are shipped to either the mainland U.S. or Asia. Recyclers will ship their material to the market paying the best prices at the time. Volatility in recycled materials markets is an issue that all recyclers deal with regardless of location. Hawai'i's recyclers are, however, especially affected by market fluctuations because of thinner profit margins resulting from high shipping costs.

**Table 1: Solid Waste Diversion for FY 2016 (Tons)**

County	Generation	Recycling	Disposal	Recycling Rate	Incineration
Hawai'i	150,977	76,220	74,758	50.5%	
Maui	317,945	97,980	219,964	30.8%	
Honolulu	1,576,815	453,046	1,123,768*	28.7%	614,397*
Kaua'i	190,225	105,654	84,571	55.5%	
State	2,235,962	732,900	1,503,061*	32.8%	614,397*

Notes:

The Department has changed its data gathering procedures beginning with FY 2016. Data are sourced primarily from permitted solid waste management facility reports and is incomplete where indicated.

Differences in recycling rates from those published by the counties are attributed to different data collection processes and differences in the classification of recycling and landfill diversion activities.

\*"Incineration" tonnage is also included as a part of "Disposal" tonnage.

**Table 2: Solid Waste Diversion Rates for FY 2012 through FY 2016**

County	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Hawai'i	38.1%	34.1%	24.7%	26.7%	50.5%
Maui*	Incomplete	32.9%	Incomplete	14.4%	30.8%
Honolulu†	38.6%	37.1%	40.3%	48.4%	28.7%
Kaua'i	32.5%	43.5%	42.4%	44.9%	55.5%
State	34.7%	38.1%	36.8%	43.0%	32.8%

Notes:

\*Incomplete Data; †Calendar year data

### III. OFFICE OF SOLID WASTE MANAGEMENT ACTIVITIES

#### Deposit Beverage Container Program

The State of Hawai'i Deposit Beverage Container Program (DBC Program) achieved an annual redemption rate of 69.8% for FY 2016, accounting for a total of over 662 million containers recycled during the Fiscal Year.

#### Program Redemption Rate

The DBC Program's redemption rate is a measure of program's effectiveness to: (1) collect and redeem eligible deposit beverage containers; and (2) recycle deposit beverage container materials.

The redemption rate is calculated by dividing the number of DBC redeemed by the number of DBC sold.

FY 2016 Redemption Rate:  $\frac{662,341,804 \text{ (Redeemed)}}{949,236,813 \text{ (Sold)}} = 69.8\%$

**Table 3: DBC FY 2016 Revenue & Expenditures**

Revenue	
Distributor Payments	\$58,325,446.49
State Investment Pool Account	\$71,174.91
Other Revenue	\$0.00
<b>Total Revenue</b>	<b>\$58,396,621.40</b>
Expenditures	
Redemption Center Reimbursements	\$53,340,650.23
County Recycling Program Support	\$449,147.17
Other Contracts	\$0.00
Program Administrative Costs	
Payroll & Fringe	\$753,594.24
Supplies & Operating Costs	\$59,445.93
Travel	\$17,235.43
Subtotal	\$830,275.60
Other Miscellaneous Expenditures	\$0.00
<b>Total Expenditures</b>	<b>\$54,620,073.00</b>

#### Segregated Rates

Segregated rates are offered by CRCs to give consumers the quicker option of redeeming their containers by weighing instead of hand counting. The rates are set by the Department and indicate the average number of deposit containers per pound when the containers are segregated by material type. Consumers have a choice to redeem their containers by either weight or hand count. CRCs must provide a hand count of loads of 200 or less containers if requested by the customer.

The Department periodically evaluates deposit beverage container weights and updates the rates accordingly to reflect trends in container packaging. The Department is evaluating the segregated rates during FY 2017. The current rates are shown in Table 4:

**Table 4: Segregated Rates**

<b>Material Type</b>	<b># Containers/lb.</b>	<b>Refund Amount/lb.</b>
Aluminum	32	\$1.60
Bi-Metal	5.9	\$0.295
Glass	2.4	\$0.12
Plastic (17 fl. oz. or less)	26.3	\$1.315
Plastic (Mixed Sizes)	18.8	\$0.94

**Electronic Waste and Television Recycling and Recovery Program**

The Electronic Waste Recycling Act was adopted in 2008 and created a recycling program for waste computers, portable computers, computer monitors and computer printers. Products covered by this portion of statute are considered “Covered Electronic Devices” (CEDs). The Electronic Waste and Television Recycling and Recovery Act was adopted in 2009 and expanded the program to cover televisions. Products covered under the expanded portion of the law are termed “Covered Televisions” (CTVs). The dual program is administered by the Office of Solid Waste Management (OSWM).

The law requires manufacturers to register with DOH and submit recycling plans to the Department. The plans describe how each manufacturer intends to collect and recycle used CED and CTV products. Table 5 indicates the number of manufacturers registered with the Department by calendar year.

**Table 5: Number of Registered Manufacturers**

<b>Calendar Year</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>CED</b>	50	53	56	60	64
<b>CTV</b>	28	28	26	27	24

**Manufacturer Ranking by Pounds Recycled in 2015**

By January 1, 2010, CED manufacturers were required to have their recycling programs established for Hawai'i and by January 1, 2011, CTV manufacturers were required to have their recycling programs established.

By law, the Department is required to rank CED manufacturers by the number of pounds they recycled. Due to the time it takes to conduct electronics collections, recycle materials, tabulate, and report to the Department, rankings are presented on a one-year lag. Table 6 displays the ranking for the manufacturers who reported recycling CEDs in Hawai'i. There were 40 CED manufacturers who reported recycling zero pounds of CEDs in Hawai'i in 2015 and are listed alphabetically in Table 7.

**Table 6: Manufacturer Ranking by CED Pounds Recycled in 2015**

<b>Rank</b>	<b>Manufacturer</b>	<b>CED Pounds Recycled</b>
1	Apple Inc.	807,748
2	HP Inc.	550,073
3	Samsung Electronics America, Inc.	265,200
4	Dell Marketing LP	123,595
5	Best Buy	63,523
6	LG Electronics USA, Inc.	40,470
7	Acer America Corporation	37,021
8	Brother International Corporation	6,522
9	Lexmark International, Inc.	3,393
10	Panasonic Corporation of North America	2,500
11	Cellco Partnership	1,368
12	IBM Corporation	1,000
12	Oki Data Americas, Inc.	1,000
14	Microsoft Corporation	712
15	ViewSonic Corporation	600
16	Amazon Fulfillment Services, Inc.	588
17	Epson America, Inc.	585
18	Xerox Corporation	371
19	Sony Electronics, Inc.	50
20	Oracle America Inc.	39
21	Canon USA	19
<b>Total Pounds Recycled in 2015</b>		<b>1,906,384</b>

**Table 7: CED Manufacturers Reporting Zero Pounds Recycled in 2015**

<b>Manufacturer</b>	<b>CED Pounds Recycled</b>
ASUS Computer International	0
barnesandnoble.com llc	0
BenQ America Corp.	0
Cyberpower Inc.	0
DPI, Inc.	0
Elo Touch Solutions, Inc.	0
Envision Peripherals, Inc.	0
Fuhu, Inc.	0
Fujitsu America Inc.	0
Google Inc.	0
Hisense USA	0
HTC America	0
Huawei Device USA, Inc.	0
Inspire Technology, LLC	0
Konica Minolta Business Solutions U.S.A., Inc.	0
KYOCERA Document Solutions America, Inc.	0
LeapFrog Enterprises, Inc.	0
LF Products Pte Ltd.	0
Motorola Solutions	0
NCR Corporation	0
NEC Display Solutions of America, Inc.	0
Nvidia Corporation	0
Planar Systems, Inc.	0
PLR IP Holdings, LLC	0
Ricoh Americas Corporation	0
Sceptre	0
SMART Technologies	0
TCT Mobile (US) Inc. DBA Alcatel one touch	0
TGCS	0
TMAX Digital Inc.	0
TongFang Global	0
Toshiba America Information Systems, Inc.	0
Trans Cosmos America, Inc.	0
Visual Land, Inc.	0
VIZIO, Inc.	0
Voxx International Corp. (formerly Audiovox)	0
VTech Electronics North America LLC	0
Wacom Technology Corporation	0
Yifang USA Inc.	0



Overall, there was a small decrease of 5,930 pounds (-0.14%) of CEDs and CTVs recycled from 2014 to 2015 (Table 8).

**Table 8: E-Waste Recycled from 2011 through 2015 (Pounds)**

<b>Calendar Year</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
CED Manufacturers	2,494,484	2,449,920	2,363,542	2,290,087	1,906,384
CTV Manufacturers	1,011,631	1,429,984	1,775,816	1,945,189	2,322,962
<b>Total</b>	<b>3,506,115</b>	<b>3,879,904</b>	<b>4,139,358</b>	<b>4,235,276</b>	<b>4,229,346</b>

Registered CED manufacturers are required to pay an annual registration fee of \$5,000 while registered CTV manufacturers are required to pay an annual registration fee of \$2,500. Any manufacturer that sells both CEDs and CTVs are required to pay a combined \$7,500 in annual registration fees. Table 9 indicates program revenue from manufacturer registration fees.

**Table 9: Electronic Device Recycling Fund Revenue**

<b>Calendar Year</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Revenue	\$320,000	\$335,000	\$345,000	\$367,500	\$380,000

### **Electronics Recycling Program Concerns and Challenges**

#### Convenience and Effectiveness of Manufacturer Recycling Programs

In an attempt to strike a balance between rigid mandates and unlimited flexibility, the law gives manufacturers considerable leeway in the types of recycling programs they offer consumers. The law requires each manufacturer to submit a recycling plan that describes collection and recycling procedures to the Department annually. While the law requires the Department to review each plan, it does not provide any criteria or performance standards by which to evaluate the plans. The Department is concerned that this leads to the approval of inconvenient programs which, in turn, discourages consumers from recycling their used electronics.

#### Lessons Learned / Moving Forward

Since passage of the law it has become clear that statutory mandates for both minimum recycling goals and customer convenience are necessary to foster a more effective and convenient statewide electronics recycling system. Some manufacturers put no effort into establishing useful recycling programs, as evidenced by the reporting of zero pounds of recycled material.

The Department will continue to work with the Legislature to strengthen the program with respect to consistency of service provided across the state, convenience of the recycling programs, long term stability of the programs, and to setting recycling goals.

### **Glass Advance Disposal Fee (ADF) Program**

OSWM continues to administer a statewide glass recovery program that is funded by an advance disposal fee (ADF). The Department collects the fee from importers of products contained in glass containers (that are not deposit beverage containers). The Department then contracts with each county to operate local glass recovery programs to divert glass from the waste stream for recycling.

As directed by statute (HRS §342G-84) the funds are distributed to the counties based on de facto population. Each county is allowed the flexibility to structure its glass-recycling program to maximize recycling of the glass. Program revenue and expenditures are indicated in Tables 10 and 11 respectively.

**Table 10: Glass ADF Revenue**

<b>Calendar Year*</b>	<b>2014</b>	<b>2015</b>
Revenue	\$800,614	\$795,563

Notes:

\*Revenue collection was switched to a calendar year basis in 2014.

**Table 11: Expenditures for County Glass Collection Programs**

<b>County</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Hawai'i</b>	\$132,700	\$129,200	\$70,000	\$128,000	\$85,200
<b>Maui</b>	\$141,600	\$122,800	\$67,700	\$111,060	\$83,000
<b>Honolulu</b>	\$0*	\$620,400	\$340,400	\$547,965	\$413,900
<b>Kaua'i</b>	\$43,796	\$68,404	\$48,824	\$53,200	\$0†
<b>State</b>	<b>\$318,096</b>	<b>\$940,804</b>	<b>\$526,924</b>	<b>\$840,225</b>	<b>\$582,100</b>

Notes:

\*Funding was not provided to the City & County of Honolulu in FY 2012 because the ADF special fund was identified as a potential source to cover general fund shortfalls.

†The contract with the County of Kaua'i was discontinued in FY 2016 because its glass recycling program failed to meet statutory requirements.

**Table 12: County Recycled Glass (Tons)**

<b>County</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Hawai'i</b>	829	785	548	878	294
<b>Maui</b>	1,809	1,843	971	1,080	553
<b>Honolulu</b>	0*	3,100	1,649	4,824	5,029
<b>Kaua'i</b>	373	335	408	587	0†
<b>State</b>	<b>3,011</b>	<b>6,063</b>	<b>3,576</b>	<b>7,369</b>	<b>5,876</b>

Notes:

\*Funding was not provided to the City & County of Honolulu in FY 2012 because the ADF special fund was identified as a potential source to cover general fund shortfalls.

†The contract with the County of Kaua'i was discontinued in FY 2016 because its glass recycling program failed to meet statutory requirements.

#### **IV. SOLID WASTE MANAGEMENT PROGRAM FUNDING**

The Solid Waste Management Disposal Surcharge (Surcharge) is the primary funding source for the OSWM and a single position in the Solid Waste Section (SWS).

The Department collects the Surcharge from the owners/operators of disposal facilities within the State. This includes all municipal solid waste and construction and demolition landfills, as well as the H-POWER waste-to-energy incinerator on O'ahu.

**Table 13: Solid Waste Disposal Surcharge Collections**

<b>Fiscal Year</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Collections	\$448,482	\$425,950	\$323,894	\$465,865	\$430,884

**Table 14: Solid Waste Disposal Surcharge Expenditures**

<b>Fiscal Year</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Expenditures	\$568,467	\$593,394	\$663,952	\$680,165	\$652,659

**Table 15: Solid Waste Disposal (Tons)**

<b>Fiscal Year</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Disposal	1,359,000	1,236,000	1,325,000	1,457,000	1,475,000